



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,798	12/11/2006	Bernard Aspar	288918US6PCT	2578
22850	7590	03/16/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
SLUTSKER, JULIA				
ART UNIT		PAPER NUMBER		
2891				
NOTIFICATION DATE		DELIVERY MODE		
03/16/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com

oblonpat@oblon.com

jgardner@oblon.com

Office Action Summary

Application No.

10/574,798

Applicant(s)

ASPAR ET AL.

Examiner

JULIA SLUTSKER

Art Unit

2891

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-97 is/are pending in the application.
- 4a) Of the above claim(s) 38-67, 69-72, 80-84 and 97 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 68, 73-79 and 85-96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 08/03/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Specie I (claims 68, 73-79, 85-96) in the reply filed on 11/16/2009 is acknowledged.
2. Claims 38-67, 69-72, 80-84, and 97 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species II and III, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 11/16/2009.

Drawings

3. Drawings are objected because Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 68, 73-75, 78, 85, and 87-93 are rejected under 35 U.S.C. 102(e) as being anticipated by MacNamara (US 6, 841, 848).

Regarding claim 68, MacNamara discloses a method for transplanting a transplant layer of material or circuits or components, comprising: routing a first wafer of material (Fig.8, numeral 9; column 9, lines 30-45; note: the term "routing" is not clearly defined. Examiner interpreted "routing" as a removing some portions of a wafer), in which the transplant layer is made (Fig.8, upper part of numeral 9), at least around or on a periphery of the transplant layer (Fig.8, upper part of numeral 9), over a thickness less than a thickness of the first wafer, (Fig.8, numeral 9) but greater than a thickness of the transplant layer (Fig.8, upper part of numeral 9); and transplanting the transplant layer (Fig.10, lower part of numeral 9) onto a second wafer or material (Fig.10, numeral 30).

Regarding claim 73, MacNamara discloses that a part of the material of the transplant layer is eliminated during the routing (Fig.8, numeral 25).

Regarding claim 74, MacNamara discloses that the first wafer is chamfered and includes at least a chamfered edge (Fig.7, numeral 26).

Regarding claim 75, MacNamara discloses that the routing is performed over a width, measured on a plane parallel to that of the first wafer, at least equal to a width of the chamfered edge, measured on the same plane (Fig.8, numeral W).

Regarding claim 78, MacNamara discloses that the routing is performed over a width, measured on a plane parallel to that of the first wafer, at least equal to a width of a zone of the first wafer which can not, without routing, be assembled with the second wafer (Fig.8, numeral W).

Regarding claim 85, MacNamara discloses that the assembling the first and second wafers is performed via molecular bonding (column 9, lines 50-67).

Regarding claim 87, MacNamara discloses that the routing takes place after a previous surface preparation of the first wafer for a purpose of assembling or transplanting (column 9, lines 15-20).

Regarding claim 88, MacNamara discloses the routing takes place before a previous surface penetration of the first wafer for a purpose of assembling or transplanting (column 9, lines 50-55).

Regarding claim 89, MacNamara discloses that the routing is performed via plasma etching (column 9, lines 25-50).

Regarding claim 90, MacNamara discloses that at least one of the two wafers is made in a semiconductor material (column 8, lines 1-15).

Regarding claim 91, MacNamara discloses at least one of the two wafers is made of silicon (column 8, lines 1-15).

Regarding claim 92, MacNamara discloses at least one of the two wafers is made of an insulating material (column 8, lines 1-15).

Regarding claim 93, MacNamara discloses that the routing is performed in a regular manner around the first wafer (Fig.8).

6. Claims 68, 76, 86, and 94-96 rejected under 35 U.S.C. 102(b) as being anticipated by Oi (US 2003/0092244).

Regarding claim 68, Oi discloses a method for transplanting a transplant layer of material or circuits or components, comprising: routing a first wafer of material (Fig.1, numeral 13; note: in the absence of clear definition of routing, examiner interpreted "routing" as an elimination some parts of a wafer), in which the transplant layer is made (Fig.2d, upper part of (10)), at least around or on a periphery of the transplant layer, over a thickness less than a thickness of the first wafer (Fig.2d, numeral 10), but greater than a thickness of the transplant layer (Fig.2d, upper part of (10)); and transplanting the transplant layer onto a second wafer or material (Fig.3K).

Regarding claim 76, Oi discloses an additional routing after assembling the first and second wafers (Fig.3j).

Regarding claim 86, Oi discloses that components are made in the first wafer before the routing (Fig.2b, numeral 11).

Regarding claim 94, Oi discloses that the routing is performed in an irregular manner around the first wafer, creating a plane (Fig.2c, numeral 13).

Regarding claim 95, Oi discloses that the routing is performed in an irregular manner, creating a marking zone (Fig.2c, numeral 13).

Regarding claim 96, Oi discloses marking the first wafer (Fig. 2c, numeral 13).

7. Claims 68 is rejected under 35 U.S.C. 102(e) as being anticipated by Iwasaki (US 6, 664, 169).

Regarding claim 68, Iwasaki discloses a method for transplanting a transplant layer of material or circuits or components, comprising: routing a first wafer of material (Figs. 12A-12E, numeral 1304; note: in the absence of clear definition of routing, examiner interpreted "routing" as an elimination some parts of a wafer), in which the transplant layer is made (Fig. 12C, numeral 1304) at least around or on a periphery of the transplant layer, over a thickness less than a thickness of the first wafer (Fig. 12E, numeral 1301), but greater than a thickness of the transplant layer (Fig. 12E, numeral 1304); and transplanting the transplant layer onto a second wafer or material (Fig. 12G, numeral 1306).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 77 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacNamara.

Regarding claim 77, MacNamara does not disclose the routing is performed over a thickness of the first wafer between 1 μm and 100 μm .

MacNamara however discloses that routing is performed to avoid danger of an unbonded peripheral area being formed around of a composite wafer (column 8, lines 53-60).

It would have been however obvious to one of ordinary skill in the art at the time the invention was made to adjust the thickness of the first wafer to be in the claimed range for the purpose of optimizing the lamination process (MacNamara, column 8, lines 53-60).

Regarding claim 79, MacNamara does not disclose that the routing is performed over a width, measured on a plane parallel to that of the first wafer of between 100 μm and 5 μm .

MacNamara however discloses that routing is performed to avoid danger of an unbonded peripheral area being formed around of a composite wafer (column 8, lines 53-60).

It would have been however obvious to one of ordinary skill in the art at the time the invention was made to adjust the thickness of the first wafer to be in the claimed range for the purpose of optimizing the lamination process (MacNamara, column 8, lines 53-60).

10. Claim 86 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki as applied to claim 68 above, and further in view of Sakaguchi (US 2002/0068419).

Regarding claim 86, Iwasaki does not disclose that components or circuits are made in the first wafer before routing.

Iwasaki however discloses that the semiconductor layer is formed in the first wafer (Fig.12C, numeral 1304). And Sakaguchi discloses that circuits are formed in the semiconductor layer in advance ([0095]).

It would have been therefore obvious to one of ordinary skill in the art at the time the invention was made to modify Iwasaki with Sakaguchi to made circuits in the first wafer before routing for the purpose of conveniently forming a semiconductor device (Sakaguchi, [0002]).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JULIA SLUTSKER whose telephone number is (571)270-3849. The examiner can normally be reached on Monday-Friday, 8 a.m.-5 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keisha Bryant can be reached on (571)-272-1844. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS
March 2, 2010

/Asok K. Sarkar/
Primary Examiner, Art Unit 2891
March 9, 2010